CLAIMS:

I claim:

A1   A process for rapidly controlling a process variable to a setpoint without overshoot using a time domain polynomial feedback controller comprising the steps of:

    a. A means for calculating an error signal by comparing a process variable to a setpoint;

    b. A means for setting said controller's output to zero if said error signal is negative;

    c. A means for calculating said analog controller's output using a user tuned time domain polynomial equation in a feedback configuration;

    d. A means for automatically converting to an integral correction for said setpoint maintenance based on user defined criteria; and

    e. A user selectable means for improving a bias tuning parameter automatically based on user defined criteria.

Whereby said controller moves said process variable to said setpoint more rapidly in applications where overshoot is not allowed requiring less energy or materials necessary to achieve said setpoint.

A2   A process for rapidly controlling a process variable to a setpoint without overshoot using a time domain polynomial feedback controller as claimed in claim A1 wherein said controller is used in ingredient addition or filling applications employs steps a., b., c., and e.

Whereby said controller improves process variability when used for product filling or ingredient addition applications requiring less materials necessary to achieve said setpoint.